

What is claimed is:

1. A compound comprising:

(a) an elastomeric copolymer including interpolymerized monomeric units derived from

5 vinylidene fluoride monomer, at least one cure site moiety, and substantially no perfluorinated vinyl ether monomers;

(b) a curable component; and

(c) at least one mineral filler, such that upon vulcanization the resulting compound has a TR-
10 of -20°C or less.

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2. The compound according to claim 1, wherein said copolymer includes terpolymers or quadpolymers.

3. The compound according to claim 1, wherein said copolymer further includes,

15 tetrafluoroethylene, hexafluoropropylene, chlorotrifluoroethylene, pentafluoropropylene, vinyl fluoride, propylene, ethylene or combinations thereof.

4. The compound according to claim 1, wherein said compound includes a blend of at least two copolymers.

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5. The compound according to claim 4, wherein at least two of said copolymers have a difference in fluorine content of at least 3 weight %.

6. The compound according to claim 1, wherein said copolymer further includes ethylenically unsaturated monomers of the formula $\text{CF}_2=\text{CFR}_f$ where R_f is fluorine or perfluoroalkyl of 1 to 8 carbon atoms.

7. The compound according to claim 1, wherein said at least one cure site moiety is derived from one or more compounds of the formula: (a) $\text{CX}_2=\text{CX}(Z)$, wherein: (i) X each is independently H or F; and (ii) Z is Br, I, Cl or R_fU wherein U=Br, I, Cl, or CN and R_f = a perfluorinated divalent linking group optionally containing O atoms; or (b) $\text{Y}(\text{CF}_2)_q\text{Y}$, wherein: (i) Y is Br or I or Cl and (ii) q=1-6.

8. The compound according to claim 7, wherein said at least cure site moiety are derived from $\text{CF}_2=\text{CBr}$, $\text{CF}_2=\text{CHBr}$, $\text{ICF}_2\text{CF}_2\text{CF}_2\text{I}$, CH_2I_2 , $\text{BrCF}_2\text{CF}_2\text{Br}$, $\text{CF}_2=\text{CFO}(\text{CF}_2)_3-\text{OCF}_2\text{CF}_2\text{Br}$, $\text{CF}_2=\text{CFOCF}_2\text{CF}_2\text{Br}$, $\text{CH}_2=\text{CHCF}_2\text{CF}_2\text{Br}$, $\text{CH}_2=\text{CHCF}_2\text{CF}_2\text{I}$, $\text{CF}_2=\text{CFCl}$ or mixtures thereof.

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9. The compound according to claim 7, wherein said compound having the formula $\text{CX}_2=\text{CX}(\text{Z})$ has an iodine or a bromine or a chlorine chemically bonded to chain ends.

10. The compound according to claim 1, wherein said component (a) is formed by
10 emulsion polymerization.

11. The compound according to claim 1, wherein said at least one mineral filler includes clay, silica, talc, diatomaceous earth, barium sulfate, wollastonite, calcium carbonate, calcium fluoride, titanium oxide, iron oxide, or combinations thereof.

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12. The compound according to claim 11, wherein the at least one mineral filler is surface treated.

13. The compound of claim 1, further comprising acid acceptors.

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14. The compound according to claim 1, wherein said compound has a solvent volume swell in FUEL H (CE15) of about 60% or less, according to ASTM D471-98 or a tensile strength of about 3.5 MPa or greater according to ASTM D418-02.

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15. A compound consisting essentially of:

(a) an elastomeric copolymer including two or more interpolymerized monomeric units derived from vinylidene fluoride monomer, tetrafluoroethylene, hexafluoropropylene, chlorotrifluoroethylene, pentafluoropropylene, vinyl fluoride, propylene, or ethylene;

(b) at least one cure site moiety; and

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(c) a curable component comprising at least one mineral filler, such that upon vulcanization the resulting compound has a TR-10 of -20°C or less.

16. A method of forming an elastomer, comprising vulcanizing the compound of claim 1.

17. An article comprising a cured compound according to claim 1.

18. A method of forming a compound comprising, polymerizing an elastomeric copolymer including interpolymerized monomeric units derived from vinylidene fluoride monomer, at least one cure site moiety, and substantially no perfluorinated vinyl ether monomers, a curable component, and at least one mineral filler.